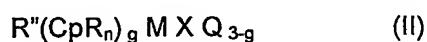


CLAIMS.

1. A metallocene catalyst component for producing polyolefins according to formula (I)



or according to formula (II)



wherein

- each Cp is a substituted or unsubstituted cyclopentadienyl ring with the bridge-head position of at least one of the cyclopentadienyl rings being occupied by a silicon atom;
 - each R is the same or different and is hydrogen or a hydrocarbyl radical such as alkyl, alkenyl, aryl, alkylaryl or arylalkyl radical containing from 1 to 20 carbon atoms or two carbon atoms are joined together to form a C4-C6 ring;
 - R'' is a structural bridge between two Cp rings;
 - M is a group IIIB, IVB, VB or VIB metal;
 - Q is a hydrocarbyl radical such as aryl, alkyl, alkenyl, alkylaryl or arylalkyl radical having from 1 to 20 carbon atoms, a hydrocarboxy radical having from 1 to 20 carbon atoms or a halogen and can be the same or different from each other;
 - g is 1 or 2, n is an integer from 0 to 4,
 - X is an hetero atom ligand with one or two lone pair electrons and selected from the group VA or VIA, substituted or unsubstituted.
2. The metallocene catalyst component of claim 1 or claim 2 wherein the number of substituents on each cyclopentadienyl is at most two.

3. The metallocene catalyst component of any one of claims 1 to 3 wherein the position of substituents is 3- and/or 5- for a cyclopentadienyl-type group, 3- and/or 6- for a fluorenyl-type group and 2- and/or 4- for an indenyl-type group.
4. The metallocene catalyst component of any one of claims 1 to 4 wherein the bridge is Et or Me₂Si.
5. The metallocene catalyst component of any one of claims 1 to 5 wherein the metal is zirconium or titanium.
6. The metallocene catalyst component of any one of claims 1 to 6 wherein Q is chlorine.
7. The metallocene catalyst component of any one of claims 1 to 6 wherein X is nitrogen, phosphorus, oxygen or sulfur.
8. A metallocene catalyst system comprising the metallocene catalyst component according to any one of the preceding claims and an activating agent having an ionising action.
9. The metallocene catalyst system of claim 8 wherein the activating agent is alumoxane.
10. The metallocene catalyst system of claim 9 wherein the alumoxane is methylalumoxane.
11. The metallocene catalyst system according to any one of claims 8 to 10 further comprising an inert inorganic support.
12. The metallocene catalyst system according to any one of claims 8 to 11 wherein the inorganic support is silica having a specific surface area of from 200 to 700 m²/g and a pore volume of from 0.5 to 3 ml/g.

13. A process for preparing the metallocene catalyst system of any one of claims 8 to 12 comprising the steps of:
- A. providing a metallocene catalyst component according to any one of claims 1 to 7
 - B. activating the metallocene component with an activating agent having an ionising action;
 - C. optionally immobilising the metallocene catalyst system on an inorganic support.
14. The process of claim 13 wherein the activating agent is an alumoxane.
15. A process for preparing polyolefins comprising the steps of:
- A. selecting a metallocene catalyst system according to any one of claims 8 to 12;
 - B. optionally providing a cocatalyst;
 - C. introducing the metallocene catalyst system and optional cocatalyst into a polymerisation zone containing an olefin monomer and an optional co-monomer and maintaining the reaction zone under polymerisation conditions;
 - D. extracting the desired polymer.
16. The process of claim 15 comprising the additional step of pre-polymerisation prior to polymerisation.
17. Use of the catalyst system according to any one of claims 8 to 12 to produce stereo-regular or non-stereo-regular polyolefins.
18. Use of the catalyst system according to any one of claims 5 to 12 to produce macro chains with desired polymeric properties.
19. Stereo-regular or non-stereo-regular polyolefins obtainable by the process of claim 15 or claim 16.

20. Macro chains with polymeric properties obtainable by the process of claim 15 or claim 16.